Summary of RTCH2 Conditioning

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Oct 20, 2009

Status

As of 4/24/09, RTCH2 was fully conditioned to operate at 10 kW with a 3.5 ms pulse length at 2 Hz. This 10 kW is somewhat larger than 120% of the nominal 6.24 kW (power to be dissipated in the cavity).
Note: CH2 had previously been conditioned in late February '08. It was reconditioned as documented here after being sent back to Technical Division for tuner upgrades.

Baking

The cavity was not baked for the conditioning in April 2009. It was baked before the conditioning in February 2008.

Vacuum

- During high power testing, the vacuum pressure was about 2.2E-07 torr as measured by the ion gauge. Before high power was applied the pressure was 1.8E-07.
- By 5/6/09, when the cavity was moved to the storage room, the pressure was 2.88E-08, with no cooling water.

Settings

- With no cooling water hooked up *f* was 324.043 with tuner at mid range (as shipped from Technical Division).
- With cooling water hooked up *f* was 324.979.
- The Q phase detector was used in the automatic frequency control loop during conditioning.

Other Anomalies

- There was some difficulty in getting a good seal for vacuum on the beamtube, on the side of the cavity with the flange with the longer neck. A ring around the flange was observed. A scratch on the beamtube was also observed. This necessitated using an o-ring instead of the metal seals which are usually used.

Details

- *04/15/09:* Started at low power, 500 us pulse width, 2 Hz and conditioned to 10 kW, 3.5 ms, 2 Hz. Multipacting was observed during various stages of the conditioning, but less occurred as time went on.
- *04/16/09:* Continued running at 10 kW, 3.5 ms, 2 Hz.
- *04/24/09*: Continued running at 10 kW, 3.5 ms, 2Hz. The main purpose for running on this day was so that Gary Lauten could measure any detectable x-rays.
- Further details may be found at http://www-hins-crl.fnal.gov/hins/Index.jsp